IN THE SPECIFICATION:

Please replace paragraph **[0005]** with the following.

[0005] For example, in order to support a combination ladder, the lower portions of the outer side rails are conventionally flared by bending a lower portion of the outer side rails outwardly so as to increase the lateral distance therebetween. ~~While,~~While such a configuration serves to increase the stability of the ladder, successfully forming the flared outer side rails presents various manufacturing complexities. For example, if the outer rails are formed with a conventional fiberglass composite material, the bending of such members may result in weakening or potential breakage of individual fiberglass strands and, ultimately, lead to the premature failure of the outer rail in which the bend is formed.

Please replace paragraph **[0010]** with the following.

[0010] Considering the desire to maintain or decrease the cost, weight, and complexity of combination ladder systems while maintaining, or even ~~improving~~ improving, the structural soundness ~~such~~ of such ladder systems, it would be advantageous to provide a ladder system having, for example, improved hinge mechanisms, support structures, and extension rail configurations.

Please replace paragraph **[0011]** with the following.

[0011] In accordance with one aspect of the present invention, a rail assembly for a ladder is provided. The rail assembly includes an inner rail assembly comprising a first inner rail and a second inner rail spaced apart from the ~~first rail~~first inner rail a first distance and substantially parallel to the first inner rail. The inner rail assembly further includes at least one inner rung extending between and coupled to the first and second inner rails. Additionally, a first discrete sleeve is positioned adjacent the first inner rail and ~~slidable~~ is slidable along at least a portion of a length of the first rail. Likewise, a second discrete sleeve is positioned adjacent the second inner rail and ~~slidable~~ is slidable along at least a portion of a length of the second rail. A first outer rail has a first end thereof fixedly coupled to the first sleeve, and a second outer rail has a first end thereof fixedly coupled to the second sleeve. At least one outer rung extends between

and is coupled to the first and second outer rails. A second distance is defined which extends between a second end of the first outer rail and a second end of the second outer rail wherein the second distance is greater than the first distance measured between the first and second inner rails.

Please replace paragraph **[0014]** with the following.

[0014] In another aspect of the present invention, a pair of hinge components may form the major structural foundation for a ladder hinge assembly. More specifically, a first hinge component having a hinge tongue may be affixed to a rail of a ladder, and a second hinge component having a hinge groove, for receiving the hinge tongue, may be affixed to another rail of a ladder. Further, each hinge component may also include a rail mount section with an outer periphery that substantially conforms to the inner periphery of the rail ~~that~~ which the hinge component is disposed within.

Please replace paragraph **[0016]** and the unnumbered paragraph following immediately thereafter with the following.

[0016] Moreover, hinge blanks may be employed to fabricate the above-mentioned hinge components. For example, fabricating hinge blanks by way of extrusion, and then removing unwanted material to form hinge components may allow for flexibility of design, as well as reduced manufacturing costs. Further, each hinge blank may include a varied cross-sectional geometry including, for ~~example.~~ example, a first reinforcement segment, a second reinforcement segment and a web segment extending therebetween, wherein the first and second reinforcement segments (of each hinge component) both exhibit a cross-sectional thickness greater than the web segment.

In accordance with another aspect of the present invention, a ladder is provided which may include a hinge with a pinch prevention mechanism. ~~The~~ This may include a first hinge component coupled to a first rail and a second hinge component coupled to a second rail. The second hinge component may be rotatably coupled with the first hinge component such that the first and second hinge components may be rotated between a first position and a second position.

At least one protruding member is biased outwardly from the first hinge component when the first hinge component and the second hinge component are in the first position. The protruding member is located and configured to be displaced relative to the first hinge component when the first hinge component and the second hinge component are in the second position.

Please replace paragraph **[0038]** with the following.

[0038] Inner rungs 110 extend between and are coupled to inner rails 104. For example, an ~~inner rung 100~~inner rung 110 may, in one embodiment, include a substantially tubular member which extends at least partially through an opening defined by an inner rail 104 having an end of the inner rung 110 swaged so as to fix ~~it~~ the inner rung 110 to the inner rail 104. In other embodiments, the inner rungs 110 may be coupled to the inner rails 104 by rivets, adhesive bonding, welding, mechanical fasteners or a combination thereof depending, for example, on the type of materials used to form the inner rungs 110 and inner rails 104. Similarly, outer rungs 112, shown in dashed lines in FIG. 2 for purposes of clarity, extend between and are coupled to outer rails 102. The outer rungs 112 may be coupled to the outer rails 102 by an appropriate technique, including one or more of those set forth above. In one embodiment, the outer rungs 112 may be configured to include fastening tabs through which rivets or other appropriate mechanical fasteners may extend for coupling of the outer rungs 112 with the outer rails. In one particular embodiment, the fastening tabs may be integral with the rung such that they are formed as a unitary or monolithic member. Such rungs, and exemplary techniques of fastening such rungs, are disclosed in United States Application Publication No. US20030188923A1, filed April 5, 2002, entitled LIGHT ~~WIEGHT~~ WEIGHT LADDER SYSTEMS AND METHODS, assigned to the Assignee of the present invention, the disclosure of which is incorporated herein by reference in its entirety.

Please replace paragraphs **[0040]** and **[0041]** with the following.

[0040] Additionally, by forming the outer rails 102 as substantially straight or linear members, greater flexibility is obtained in designing the ~~cross-section~~cross-sectional shape of the outer rails 102. Such added flexibility enables the outer rails 102 to be designed for reduction in

weight, increase in strength, etc., without having to consider the potential structural effects of a bend placed in such outer rails 102. By way of example, outer rails 102 (as well as inner rails 104) may be configured to exhibit hollow, C-shaped, or I-shaped cross-sectional shapes. Additionally, outer and inner rails 102 and 104 may be fabricated from various materials including, for example, composite materials including fiberglass, metals, such as aluminum, or metal alloys.

[0041] With respect to the use of composite materials, outer and inner rails 102 and 104 may be manufactured from a fiberglass composite material which may include, for example, a thermoset resin such as a polyurethane, although other thermoset polymer resins may be employed. The use of, for example, a polyurethane resin provides more durable outer and inner rails 102 and 104, particularly with respect to fracture- and impact-resistance. Furthermore, the use of, for example, a polyurethane resin allows for thinner walled structural members (e.g., outer and inner rails 102 and 104) thereby enabling the fabrication of a ladder having substantial weight reduction over prior art ladders. Additionally, the outer and inner rails 102 and 104 may be formed by a pultrusion process such as set forth in United States Application Publication No. US20030188923A1. Particularly, strands of reinforcing material may be pulled through a bath of, for example, polyurethane resin and then through a heated die which exhibits the desired ~~cross sectional~~<u>cross-sectional</u> shape of the outer or inner rail 102 or 104. As the composite material is pulled through the heated die, a partial cross-linking may be effected within the thermoset resin such that the material retains the shape of the die upon removal ~~from~~ therefrom.

Please replace paragraph **[0047]** with the following.

[0047] It should be noted that the variously described features of the sleeves 106 in FIGS. 3A – 3C are labeled with like reference numerals for ease of illustration and description. However, it is also noted that such sleeves 106 are actually depicted as being "left-hand" and "right-hand" configurations which are substantially mirror images of one another. However, the design of sleeves 106 may be identical such that only a single configuration (i.e., the sleeves 106 not being ~~"right-hand" "left-hand"~~<u>"right-hand" or "left-hand"</u> specific) is provided if desired. Doing so may reduce inventory and also simplify associated manufacturing processes such as, for

example, by eliminating the need for different molds or machining patterns used to manufacture the sleeves 106.

Please replace paragraphs **[0049]** and **[0050]** with the following.

[0049] Referring more specifically to FIGS. 4B and 4C, the outer rail 102 may exhibit a generally C-shaped cross-sectional configuration including a first wall 164 on the rung side and an opposing wall 166 laterally displaced from the first wall 164. The first wall 164 and opposing wall 166 are joined together by a common side wall 168. A first support element or brace 170 is fixed to the first wall 164 at location 172 and to the second ~~opposing wall~~opposing wall 166 at location 174. Additionally, the first brace 170 is fixed to the lowermost rung 112A at a location 176 which is laterally inwardly spaced from the outer rail 102. The first brace 170 may be fixed at the specified locations by ~~connection elements 133~~connection elements 130 such as those described ~~above herein~~hereinabove.

[0050] Further, a second support element or brace 180 may be affixed to the first wall 164 at location 182 and the second opposing wall 166 at location 184 such as by ~~connection elements 133~~connection elements 130. The second brace 180 is further fixed to the lowermost outer rung 112A at a location laterally inwardly displaced from the outer rail 102 such as at location 176. Such a configuration is advantageous in supporting both bending loads and torsion loads applied to the outer rails 102 by distributing an applied loading to various longitudinally spaced locations along the outer rail 102, including both sides of the outer rail 102 (i.e., the first wall 164 and second opposing wall 166) as well as to a laterally inwardly spaced location along the lowermost rung 112A. For example, utilizing cantilevered load bending tests as set forth in American National Standards Institute (ANSI) A14.2 (metal ladder), A14.5 (ladders formed of fiber reinforced plastic materials) and A14.10 (type IAA ladders with increased load ratings), the support structures according to the present invention reduce the amount of bending and torsion experienced by associated ladder rails as compared to existing support structures.

Please replace paragraph **[0052]** with the following.

[0052] Referring briefly to FIG. 4D a support structure 162′ is shown according to another embodiment of the invention. The support structure 162′ may be formed as a somewhat partial C-shaped unitary member which fits within the longitudinally extending channel defined by the outer rail 102. The support structure 162′ may be affixed to the outer rail 102 at locations 172, 174, 182 and 184 such as by ~~connection elements 133~~connection elements 130 and as described above herein. The support structure 162′ may also be fixed to the lowermost outer rung 112A at location 176 by a ~~connection element 133~~connection element 130. Thus, the support structure 162′ provides similar structural support as that shown and described with respect to FIGS. 4A – 4C, but through use of a unitary member which may be simpler and more economical to manufacture.

Please replace paragraphs **[0057]** and **[0058]** with the following.

[0057] FIGS. 6A and 6B show another hinge blank 240 and a hinge component 242 formed therefrom, respectively. Referring first to FIG. 6A, the hinge blank 240 may include a grooved segment 244 comprised of a first plate segment 246 and second plate segment 248 which is spaced apart from, and substantially parallel with, the ~~first plate segment 244~~first plate segment 246. The hinge blank 240 further includes a first reinforcement segment 250, a web segment 252, and a second reinforcement segment 254. The first and second reinforcement segments 250 and 254 each exhibit a cross-sectional thickness "T" that is different from, in this instance greater than, the cross sectional thickness "t" of the web segment 252 extending therebetween. The hinge blank 240 may be formed of, for example, aluminum, by a process such as, for example, extrusion.

[0058] Referring to FIG. 6B, the hinge component 242 may be formed by ~~removing of~~removing appropriate portions from the hinge blank 240 (FIG. 6A) including the forming of the hinge groove 260, locking apertures 224, pivot apertures 226 and fastening apertures 228 as shall be described in more detail below.

Please replace paragraph **[0061]** with the following.

[0061] Turning now to FIG. 7A, a hinge assembly 300 is shown according to an embodiment of the present invention. The hinge assembly 300 includes a first hinge component 220 disposed within and affixed to an inner rail 104 and a second hinge component 242 also disposed within and affixed to an inner rail 104. As discussed above, the outer periphery 302 of the first hinge component's rail mount section 230 substantially conforms to and cooperatively mates with the inner periphery 304 of the inner rail 104. Similarly the outer periphery 306 of the second hinge components rail mount section 262 substantially conforms to the inner periphery 308 the inner rail 104 to which it is mounted. The hinge tongue 222 of the first hinge component 220 fits within and matingly engages the ~~hinge groove 244~~grooved segment 244 of the second hinge component 242. A selectable hinge positioning and locking mechanism (not shown in FIG. 7A) may be disposed in the pivot apertures 226 enabling relative rotation of the first hinge component 220 and the second hinge component 242 about a defined axis 310 as will be appreciated by those of ordinary skill in the art. Additionally, the hinge positioning and locking mechanism may be used to selectively engage the locking apertures 224 of the first and second hinge components 220 and 242 thereby selectively locking the hinge assembly 300 in a desired rotational position.

Please replace paragraph **[0063]** with the following.

[0063] Referring briefly to FIG. 7B, a cross-sectional view of the hinge component 242 mounted within its associated inner rail 104 is shown according to one embodiment of the present invention. The outer periphery 306 of rail mount section 262 of hinge component 242 thus substantially conforms the inner periphery 308 of the rail 104 in an interlocking manner. It is noted that other cross-sectional geometries for hinge components may be utilized. For example, referring briefly to FIGS. 5A and 5B along with FIG. 7B, the reinforcing ~~sections~~ segments 250 and 254 of the second hinge component 242 need not exhibit a substantially circular shape cross-sectional geometry. Additionally, the first reinforcing ~~section~~ segment 250 need not exhibit the same cross-sectional geometry as the second reinforcing ~~section~~ segment 254. Moreover, the web ~~section~~ segment 252 need not include a surface which is substantially tangent with a surface of each reinforcing ~~section~~ segments 250 and 254. Rather, in one exemplary embodiment, the web ~~section~~ segment 252 may be configured such that it extends

from each reinforcing ~~section~~ segment 250 and 254 in a substantially radial relationship therewith forming a dog bone-type geometry. In any case, the interior cross-sectional geometry of the rail 104 may be sized and configured to substantially conform and cooperatively mate with the cross-sectional geometry of the hinge component's rail mount section 262.

Please replace paragraph **[0065]** with the following.

[0065] Referring back to FIG. 7A, the hinge assembly 300 may further include an antipinch mechanism. In the embodiment shown in FIG. 7A, the antipinch mechanism may include a biased protruding member 350 operably disposed within one or more of the structural reinforcement ~~members~~ segments (e.g., 208, 250, 254 of FIGS. 5A and 5B) of the hinge components 220 and 242. For example, as shown in FIG. 7C, the antipinch mechanism may include a biasing member 352, such as a coil spring, disposed within a reinforcement ~~member~~ segment 208 of a hinge component 220, the biasing member 352 having a lower end fixed to or abutting a first stopping member 354. The stopping member 354 may include, for example, a set screw, an indented portion of the reinforcement ~~member~~ segment 208, a machined shoulder within the reinforcement ~~member~~ segment 208 or other similar structure as will be appreciated by those of ordinary skill in the art. ~~The protruding~~A protruding member 350 may be disposed within the reinforcement ~~member~~ segment 208 and biased such that the protruding member 350 protrudes out the upper end 356 of the reinforcement ~~member~~ segment 208. Another stopping member 358 may be used to limit the longitudinal travel of the protruding member 350 such that at least a portion thereof remains within the reinforcement ~~member~~ segment 208.

Please replace paragraphs **[0068]** through **[0070]** with the following.

[0068] While the embodiment shown in FIGS. 7A and 7D have been described with respect to two opposing biased protruding members 350 which rotate into and out of abutting contact with one another, it is noted that a single biased protruding member 350 may be used for a given hinge assembly 300. For example, the biased protruding member 350 may be located and configured to rotate into and out of abutting contact ~~with,~~with a defined surface or a

structural member of the opposing hinge ~~component~~ component, as will be appreciated by those of ordinary skill in the art.

[0069] Referring now to FIG. 7E, the hinge assembly 300 is shown in a closed position ~~and,~~and in a reverse view relative to the view shown in FIG. 7D. It is noted that the view presented in FIG. 7E is a reverse view of the hinge components 220 and 242 relative to that which is shown in FIG. 7D and, thus, the ~~pivot pin 360~~pivot pin 362 and ~~locking pins 362~~locking pins 364 of the selectable hinge positioning and locking mechanism are seen. Upon rotation of the hinge assembly 300 into the closed position, the biased protruding members 350 (see FIG. 7D) are longitudinally displaced within the reinforcement members 208 and 254 of their respective hinge components 220 and 242. Upon rotation of the hinge assembly 300 ~~out the~~out of the closed position, the biased protruding members 350 will again extend outward from their respective hinge components 220 and 242 such as shown in FIGS. 7A and 7D.

[0070] Referring briefly to ~~FIGS. 7A,7D~~FIGS. 7A, 7D and 7E, another feature of the present invention is shown. The abutment shoulders 229 of the first hinge component 220 are each shaped and configured so as to abuttingly engage one of the laterally spaced plates which define the ~~tongue groove 260~~hinge groove 260 when the hinge assembly is rotated into the closed position (i.e., as shown in FIG. 7E). Thus, when the hinge assembly is in a closed position such as for straight or extension ladder configurations, loadings applied to the ladder are transferred directly between the abutting contact of the two hinge components 220 and 242, including the complementary and cooperative abutting contact of abutment shoulders 229 of the first hinge component 220 with the laterally spaced plates of the ~~tongue groove 260~~hinge groove 260. Such a configuration also enables direct transfer of force between the reinforcement ~~members~~ segments 204 and 208 of the first hinge component 220 with the reinforcement ~~members~~ segments 250 and 254 of the second hinge component 242. Thus, the first hinge component 220 and second hinge component 242 effectively act as a single continuous beam or column when placed in the closed position. Such is in contrast to prior art mechanisms wherein loadings were transferred solely by way of locking pins 364 (see FIG. 7E).

Please replace paragraph **[0072]** with the following.

[0072] Similarly, other embodiments of the invention may be devised which do not depart from the spirit or scope of the present invention. Features from different embodiments may be employed in combination with one another. The scope of the invention is, therefore, ~~are to be~~to be construed in accordance with the appended claims and their legal equivalents, rather than by the foregoing description. All additions, deletions, and modifications to the invention, as disclosed herein, which fall within the meaning and scope of the claims are to be embraced thereby.

Please replace the abstract with the following.

Ladder configurations and components are provided including an outer rail assembly which is longitudinally adjustable relative to an inner rail assembly. The outer rail assembly may include a pair of spaced apart outer rails each fixedly coupled to an associated sleeve or sliding mechanism. Each sleeve is in ~~turn slidably couple~~turn slidably coupled to an inner rail of the inner rail assembly. The outer rails may be positioned and oriented at an acute angle relative to the inner rails so as to provide an increased base distance between the two outer rails. Support structures are also disclosed which are coupled at multiple locations along a rail member and at least one location of a rung. Additionally, ladder hinges are disclosed including hinge components configured to effectively transmit loads from associated rails. In one embodiment the hinge may include a pinch prevention mechanism.